16

A

SCHEME

OF THE

LECTURES,

ON THE

Animal Oeconomy;

PROPOSED

To Begin on *Monday*, the 1ſt of *October*, 1739.

By *WILLIAM SCHAW*, M. D.

LONDON,

Printed in the Year, MDCCXXXIX.

THE INTRODUCTION.

SINCE I found in my former Courſes, that the Want of an Abſtract, or View of my Syſtem was attended with uncertain Conjectures; at the Deſire of ſeveral Gentlemen, who did me the Honour to attend my Prelections, I am induc'd to publiſh a ſhort Sketch digeſted under the following Heads; and I hope, it will be uſeful, and neceſſary to give a clear Idea of this Undertaking.

IT would be almoſt needleſs for me to ſay any Thing as to the Advantages ariſing from a Regular Study of Phyſic in all its Branches; and I am convinc'd at firſt Sight, that Every One muſt allow the Knowledge of the Inſtitutes to have their Merit. By what Laws the Functions of a living Animal are conducted, and carried on, muſt be known by him, who would reform theſe Laws when ſubverted: And *for this Purpoſe, it's neceſſary to know what Rules the* Fluids *obſerve in their Motions; and from what Cauſe, and how the more ſolid Syſtem is actuated in a Natural State.*

THIS, even as a Speculation, or Piece of Philoſophy, deſerves to be conſidered, and attended to; but when we take a View of its neceſſary Connexion with the Regular, and Certain Practice of Phyſic, *and how far it influences it, this ſhould be eſteem'd no inconſiderable Part of Study.*

IT will appear from hence, That the Rational Practice is the Reſult of a well-founded Theory, without which it is impoſſible to enter into the Nature of Diſeaſes, and foretell their Conſequences; ſeeing the Inſtitutes *are an Inveſtigation of the Laws of the Oeconomy; which ſo long as they preſide over the Animal, conſtitutes the Idea of Health; and as ſoon as the Regular Functions and Actions are perverted, a Diſeaſe muſt conſequently follow.*

A
SCHEME,
GIVING
A General View of the Prelections from *Boerhaave*'s INSTITUTES.

THIS Courſe of Phyſiology refers to the Inſtitutions of the late Famous Profeſſor *Boerhaave.*

THE Scheme is perſued on the ſame Plan, and each Demonſtration made obvious to every Capacity.

FROM the Structure given, the Action in a natural State is deduced, and the *Phænomena* depending upon the ſame conſidered.

THAT the more abſtruſe, and intricate Parts of the Animal Oeconomy may be comprehended with the greateſt Eaſe, we ſet out with what is ſimple, and obvious, and eaſily underſtood by every Auditor; and from thence proceed to what is more complex: Whereby all the Alterations, and Changes will appear to be the neceſſary Effect of the Phyſical Agents before-explain'd.

CHAP. I.

The INTRODUCTION.

Containing the Hiſtory, or Riſe, and Progreſs of Phyſic; *The Application of this to every Animal Subſtance, and particularly the Human.*

CHAP. II.

§. 1. The Functions in General.

§. 2. *Maſtication* and *Deglutition.*

§. 3. The *Stomach* conſider'd as a Cavity.

§. 4. The Anatomical Structure of the *Stomach.*

§. 5. The different Plans of the *Muſcular Fibres*, and the proper Direction of Each.

§. 6. The Conſequence of theſe acting *Muſcular Fibres*, and how far *Digeſtion* depends upon them.

§. 7. *Di-*

§. 7. *Digeſtion* in General: With the various *Hypotheſes* concerning it, ſupported by the different Sects of Philoſophers.

§. 8. The Nature, and Action of the *Bile*, and the *Pancreatic Juices*.

§. 9. The Expulſion of the *Fæces*, and from what Cauſe the *Periſtaltic* Motion of the *Inteſtines*.

§. 10. The Application of the *Chyle* to the Mouths of the *Lacteal Veins*, and the Motion of this *Fluid* thorow their Cavities.

§. 11. The Structure, and Uſe of the *Glands* of the *Meſentery*.

§. 12. The Paſſage of the *Chyle*, from theſe *Glands* to the Receptacle.

§. 13. Its Courſe from thence to the *Subclavian*, and by what Mechaniſm it is propelled thorow the *Lacteal Duct*.

CHAP. III.

SANGUIFICATION and *CIRCULATION*.

§. 1. The Situation, and Connexion of the *Heart*, determined from its Natural Appearance in the Body.

§. 2. Its true Inclination proved from its Adheſion to the *Pericardium*, and Connexion with the large *Blood-Veſſels.*

§. 3. The particular Figure of the *Heart.*

§. 4. The Anatomical Structure; in which is ſhewn the Decurſion of the *Muſcular Fibres*, and their mutual Inclinations.

§. 5. From hence the Action of the *Heart* as a *Muſcle* is eaſily aſcertained.

§. 6. The Structure, and Uſe of the *Pericardium*, and by what Mechaniſm it aſſiſts the Motion of the *Heart.*

§. 7. The Phyſical Properties of the *Blood*, together with its *Analyſis*, from *Chymical Experiments.*

§. 8. As a *Fluid*, how far it is ſubject to the Laws of *Hydroſtatics.*

§. 9. How far the alternate State of *Syſtole*, and *Diaſtole*, is ſubject of Demonſtration; and in what Proportion the *Synchroniſm* and *Diachroniſm* takes Place; proved, 1*ſt*. From a peculiar Mechaniſm in the *Auricles*, and the Anatomical Diſpoſition in the *Ventricles*. 2*dly*. This is further confirm'd by the Progreſſion, which all Bodies in Motion, whether *Solid* or *Fluid*, muſt obſerve.

§. 10. The Figure, and Structure of the *Arteries*, with their reſpective Properties; and the Advantages to the *Fluids* in Motion ariſing from thence.

§. 11. The

§. 11. The Structure of the *Veins*, and their Uſe: With an *Hydroſtatical* Demonſtration of the Uſe of the *Valves* in the *Veins.*

§. 12. The Cauſe of *Motion* in the *Solids*, and the neceſſary phyſical Properties in the *Fluids*, for aſſiſting this *Motion.*

§. 13. The different Directions of the various *Particles*, according to their phyſical Properties.

§. 14. Some uſeful Theorems on the Nature of *Projectile Motion.*

§. 15. The Generation of *Animal Heat*, with its different Degrees.

§ 16. The Equable Motion of the *Refluent Blood* in the *Veins*; from what Cauſe, and of what Uſe.

§. 17. Several Experiments Curious, and Uſeful; proving the *Motion* of the *Blood* to be a *Perfect Circulation.*

To which is ſubjoined the different Arguments in their full Force, for, and againſt *Circulation.*

CHAP. IV.

SECRETION.

§. 1. The Nature of *Secretion* in General, and upon what an increaſed, or diminiſhed Quantity depends.

§. 2. Why different in different Parts of the Body, and the Phyſical Reaſon for the ſame.

§. 3. The Nature, and Properties of the *Glands.*

§. 4. Conglobate *Glands.*

§. 5. Conglomerate *Glands.*

§. 6. Each Glandular Subſtance conſidered by itſelf, as the *Liver*, *Spleen*, *Kidnies*, &c. The peculiar Mechaniſm in the Structure of Each, and the Uſes of the ſecreted Liquors to the Oeconomy.

CHAP. V.

The General Offices of LIFE.

§. 1. *Reſpiration* in General: And on what, *Perfect Reſpiration* depends.

§. 2. The *Lungs* a *Pneumatick* Engine.

§. 3. The Structure, and Uſe of the *Lungs.*

§. 4. The different *Fluids*, that paſs thorow the *Bronchials*, and *Blood Veſſels.*

§. 5. A particular Account of the *Intercoſtal Muſcles*, with a Demonſtration of their Action.

§. 6. The Anatomical Structure, and Uſe of the *Diaphragm*; and how far it is aſſiſtant in this Complicate Action.

CHAP. VI.

NUTRITION.

§. 1. The Nature of *Nutrition.*

§. 2. How *Nutrition* is performed; and in what *Veſſels.*

§. 3. The ſame Phyſical Cauſe, that produces an *Abraſion* of the Parts, is the Cauſe of *Nutrition.*

§. 4. *Nutrition*, when finiſhed: And why a further Increment is impoſſible after a *Perfect Nutrition.*

§. 5. A Phyſical *Rigidity* of the *Parts* is the Period of Animal Life.

CHAP. VII.

MOTION in General.

§ 1. The Nature, and Cauſe of *Animal Motion.*

§ 2. *Muſcular Motion* : With the Properties of a *Muſcle.*

§. 3. The Advantages of *Motion*, ariſing from the Direction, and Inclination of the *Muſcular Fibres*

§. 4. The different Kinds of *Motion* ; Voluntary, Involuntary, and Mixed Motion : With the Phyſical Cauſe of the ſame.

§. 5. The Diſtribution of the Nervous Filaments to the *Muſcles.*

§. 6. Experiments on the *Nerves* : With a Demonſtration of their Offices, with Regard to *Motion.*

§. 7. The Ramifications of the *Arteries*, and their Diſtribution to the *Muſcles.*

CHAP. VIII.

SENSATION.

§. 1. The Nature, and Difference of the *Organized Parts* aſſigned for this Uſe.

§. 2. *Touching*

§. 2. *Touching*, what; And why different in different Perſons.

§. 3. The proper Inſtruments of *Touching*.

§. 4. *Taſting:* The Organs aſſigned for this Purpoſe.

§. 5. *Smelling:* The Conformation of the *Noſtrils* for that Effect.

§. 6. The particular *Mechaniſm* of the *External*, and *Internal Ear*, for the Reception of the ſonorous Rays.

§. 7. An Uſeful Diſſertation on *Sound:* With a Demonſtration from a particular Inſtrument, by which the Doctrine of *Sounds* is made plain, and obvious; and by that Means *Hearing* is eaſily explained, and fully underſtood.

§. 8. The Structure of the *Eye*.

§. 9. The *Eye* an Optical Inſtrument: And on what *Perfect*, and *Imperfect Sight* depends; wherein *Viſion* is fully explain'd, and conſider'd.

CHAP. IX.

GENERATION.

§. 1. What conſtitutes the Difference in the *Sex*.

§. 2. The proper Inſtruments of *Generation* in Both.

§. 3. The Nature of *Generation* ſupported by *Philoſophy.*

§. 4. *Spontaneous*, or *Equivocal Generation* exploded as abſurd, and contradictory to the Laws of *Philoſophy.*

§. 5. *Impregnation.*

§. 6. *Conception.*

§. 7. The Nutrition of the *Fœtus* in the Womb.

§. 8. The Communication of the *Blood*, from the Mother to the *Fœtus*; by what *Mechaniſm* performed.

§. 9. The Properties of the *Catamenia*, and the Cauſe of their Periodical Evacuation.

PART II.

The PATHOLOGY.

§. 1. The Phyſical Difference between *Health*, and a *Diſeaſe.*

§. 2. What conſtitutes a *Diſeaſe.*

§. 3. The *Diſeaſes* peculiar to the *Humours.*

§. 4. The different States of the *Humours* in different Conſtitutions.

§. 5. The

§. 5. The *Diſeaſes* proper to the *Solids.*

§. 6. The Symptoms of *Diſeaſes* : How they conſtitute the *Prognoſtices,*

1. Ariſing from the *Pulſe.*
2. *Reſpiration.*
3. The *Alteration,* or *Change,* induced from the *Secretions* ; and particularly the *Urine.*

PART III.

§. 1. The different Claſſes of *Medicines* ; with their Nature and Properties.

To which is ſubjoined,

§. 2. A General Theorem to calculate the juſt Proportion, and Quantity of every *Medicine,* proper for every Age, and Conſtitution.

Whilſt the various Arguments, and different *Hypotheſes* are fairly ſtated, and impartially conſider'd thro' the whole Progreſs :

By W. SCHAW, *M. D.*